



# PLAN: NEWMARKET

Public Workshop



boston planning &  
development agency

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KITTELSON  
& ASSOCIATES

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CONSULTING INC

# Agenda

- Zoom Etiquette
- Plan Overview
- Social Justice and Equity Framework
- Newmarket Today
- Temperature Check
- Defining 21<sup>st</sup> Century Industry Use and Jobs
- Breakout Room
- Report Back and Next Steps



# Breakout Room: Discussion Questions

1. What are the types of land uses in Newmarket that are currently an asset to you and your community? What additional types of uses would you like to see in Newmarket?
2. What kinds of jobs are you hoping to see more of in Newmarket? More traditional industries (food processing, social services, retail)? More 21st century business and labs? Other?
3. What issues, needs, and challenges do you and your community want to see addressed in PLAN: Newmarket?

# 01

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## Zoom Etiquette





# Zoom Recording

At the request of community members, this event will be recorded posted on the PLAN: Newmarket project webpage at **<http://bostonplans.org/PlanNewmarket>** for those who are unable to attend the Zoom event live.

Also, it is possible that participants may be recording the meeting with their phone cameras or other devices. If you do not wish to be recorded during the meeting, please turn off your microphone and camera.

If your camera and microphone are off, you can still participate through the text chat feature at the end of the presentation.

# Meeting Format

- Presentation followed by Breakout Rooms and comments.
- During the presentation, all microphones will be muted.
- Once the presentation is over, we will take questions and comments in two ways:



Through the **Q&A tab** at the bottom of your screen; or

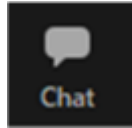


You can **raise your hand** and we will take your questions in the order that hands were raised.

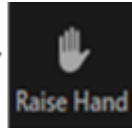
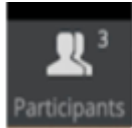


# Zoom Tips

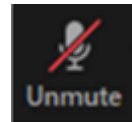
- *Here are some tips on using Zoom for first-time users.*
- Your Controls are at the Bottom of the screen:



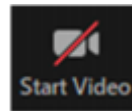
Use the chat to type a comment or ask a question at any time – Members of the PLAN: Newmarket team will enable the chat at the end.



To raise your hand, click on “Participants” at the bottom of your screen, and then choose the “Raise Hand” option in the participant box



Mute/unmute – Participants will be muted during the presentation – the host will unmute you during discussion if you raise your hand and it is your turn to talk

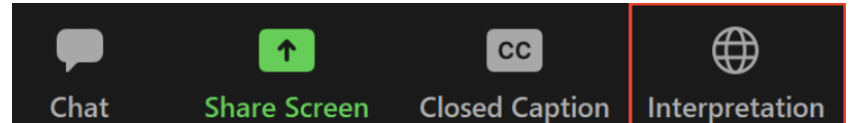


Turns your video on/off

# Interpretation

- Spanish - “Spanish”
- English- “English”
- Haitian Creole- “Haitian Creole”
- Cantonese- “Chinese”
- Mandarin- “Japanese”
- Cape Verdean Creole- “German”

Everyone must select a language





# Interpretation

**English:** For interpretation in [\_\_\_\_],

1. Go to the horizontal control bar at the bottom of your screen. Click on "Interpretation."
2. Then click on the language that you would like to hear.
3. You are now accessing this meeting in [\_\_\_\_]

**Mandarin:** 若需普通话口译服务：

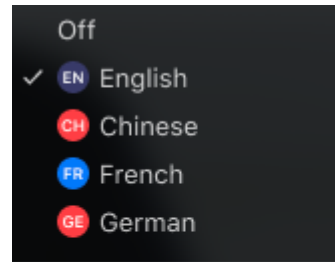
1. 在屏幕下方的长方形控制栏中，请点击 "Interpretation."
2. 请点击您所需收聽的语言。
3. 您即可收听普通话的会议口译。

**Spanish:** Para traducción en Español,

1. Vaya a la parte baja de la pantalla, en la barra horizontal, y presione la tecla "Interpretation".
2. Luego seleccione el idioma que desea escuchar.
3. Después de seleccionar, usted entrará a la reunión en el idioma "Español".

**Cantonese:** 若需粵語口譯服務：

1. 與屏幕下方之長方形控制欄中，煩請點擊 "Interpretation."
2. 煩請點擊您所需收聽的語言。
3. 您即可手痛粵語的會議口譯。



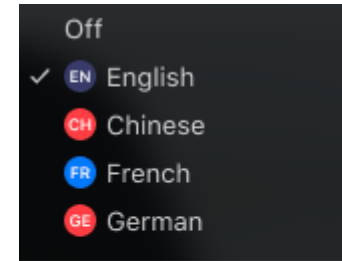
# Interpretation

**Haitian Creole:** Pou entèpretasyon Kreyòl ayisyen,

1. Ale nan kontwòl ba nan pati anba ekran an epi Klike sou "Interpretation"
  2. Apre sa, klike sou lang ke ou ta renmen tande a.
- Kounye a ou gen aksè a reyinyon an Kreyòl ayisyen

**Cabo Verdean Creole:** Gossim bu ta entra na reuniao na kriolu,

1. Bai na barra de controlo horizontal na parte inferior di computador bu kalka na "Interpretation".
2. Depos kalka na idioma qui bu kre ovi.
3. Agora djabu sta ta entra na reuniaun em creole.





# Zoom Etiquette

- Please remain muted until called on. If you'd like to speak during this time please use the "Raise Hand" function in Zoom.
- The chat function will be enabled during the discussion agenda item. (In keeping with convention from in-person meetings.)
- Please be respectful of each other's time.
- We ask that participants limit their questions so that others may participate in the discussion. If you have more questions, please wait until all others attending have an opportunity to ask questions.
- If we are unable to get to your question at this meeting please put them in the Chat at the end or email **Arreen.I.Andrew@boston.gov**

# 02

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## Planning Process Overview



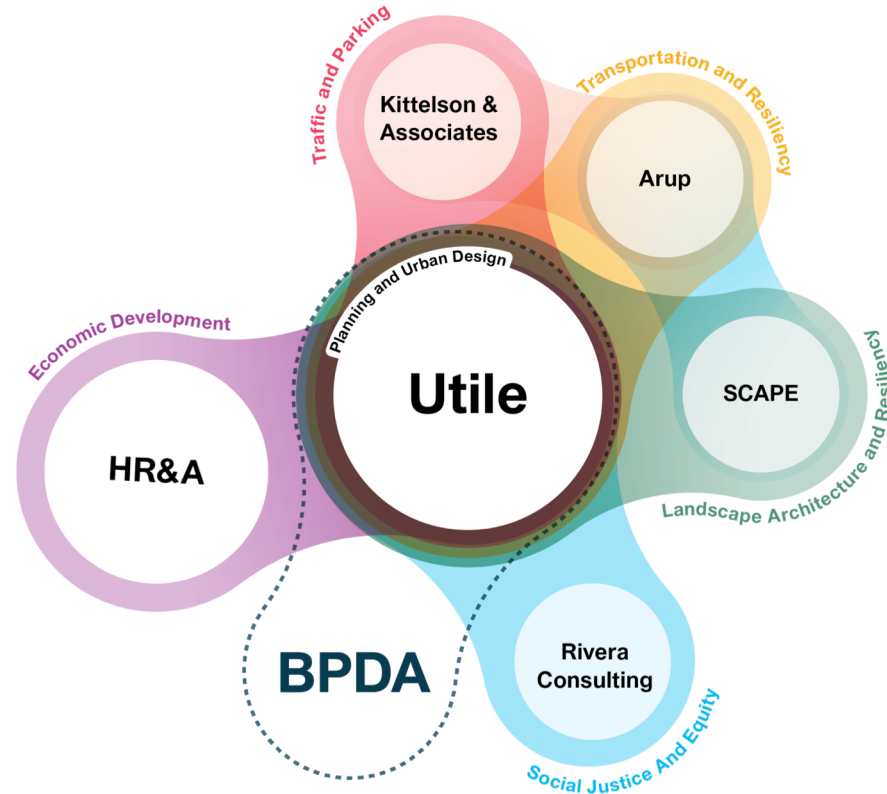
# Overview: Initiative Focus

PLAN: Newmarket, The 21st Century Economy Initiative looks at the needs of an industrial neighborhood in the City of Boston. The Initiative will **work closely with the community** to develop a vision for the area that **incorporates a strategy for job retention and growth**.

Identified by Imagine Boston 2030 as one of the expanded neighborhoods, the process will produce the following products:

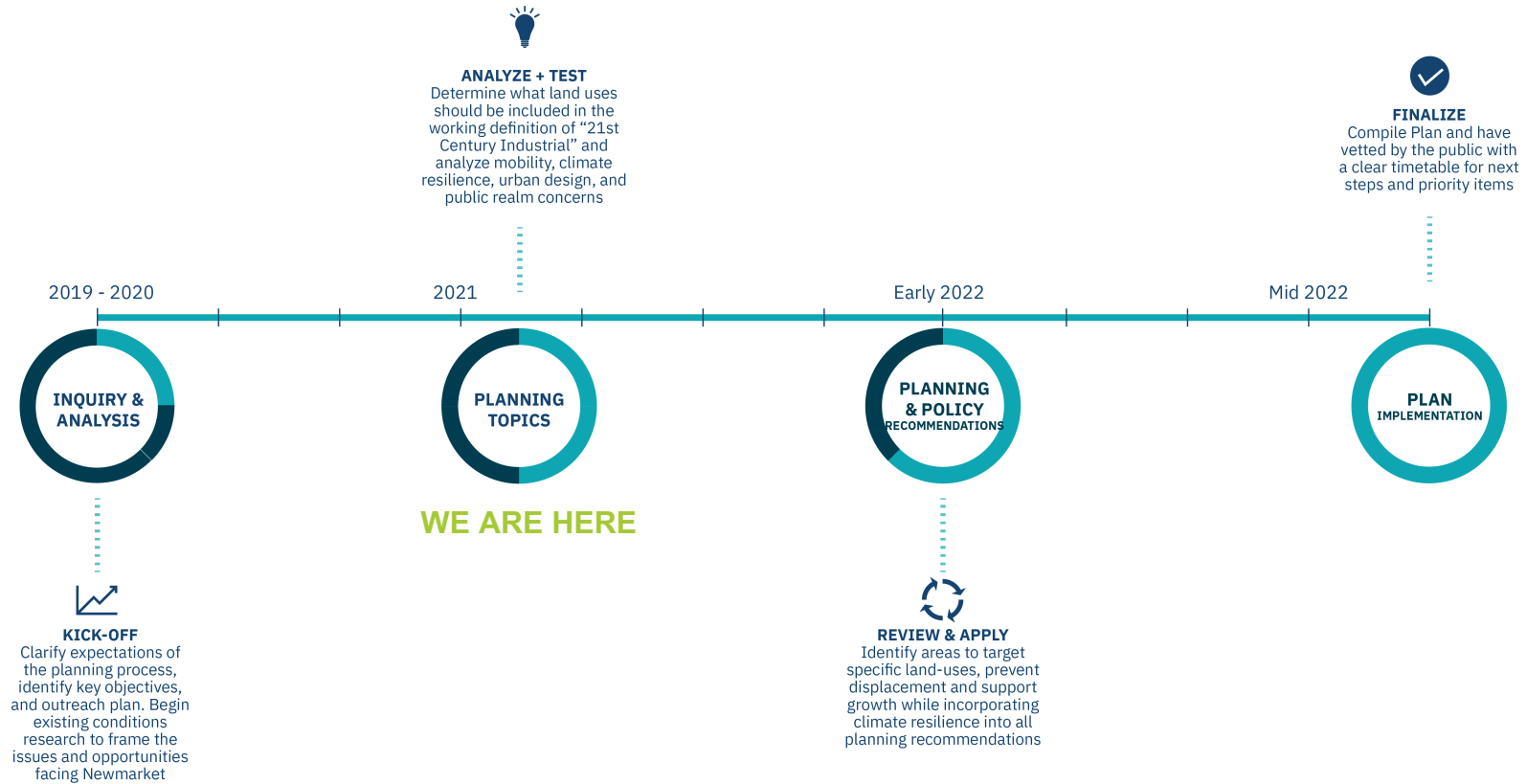
- Economic policy and land use plan
- Zoning Updates
- Public realm & urban design guidelines
- Mobility recommendations
- Climate resilience strategy
- Social justice and equity impact analysis

# Overview: Project Team





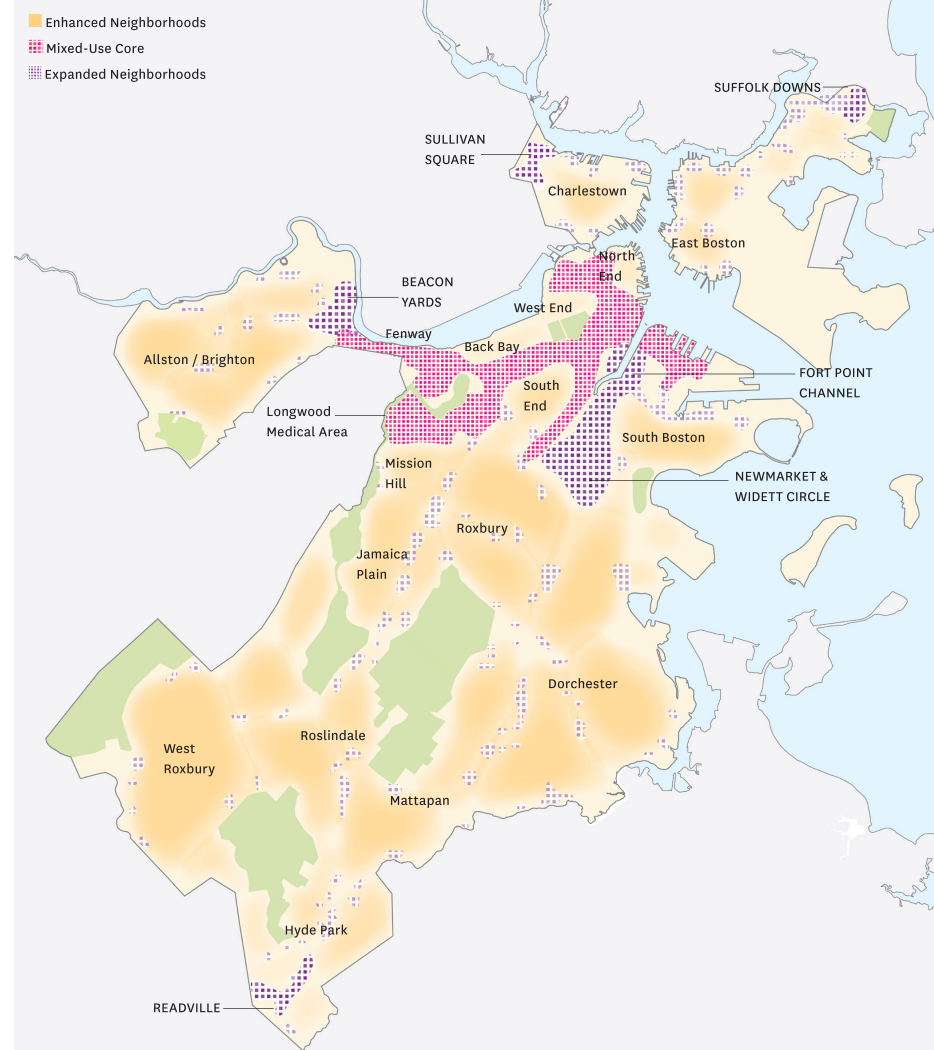
# Overview: Timeline

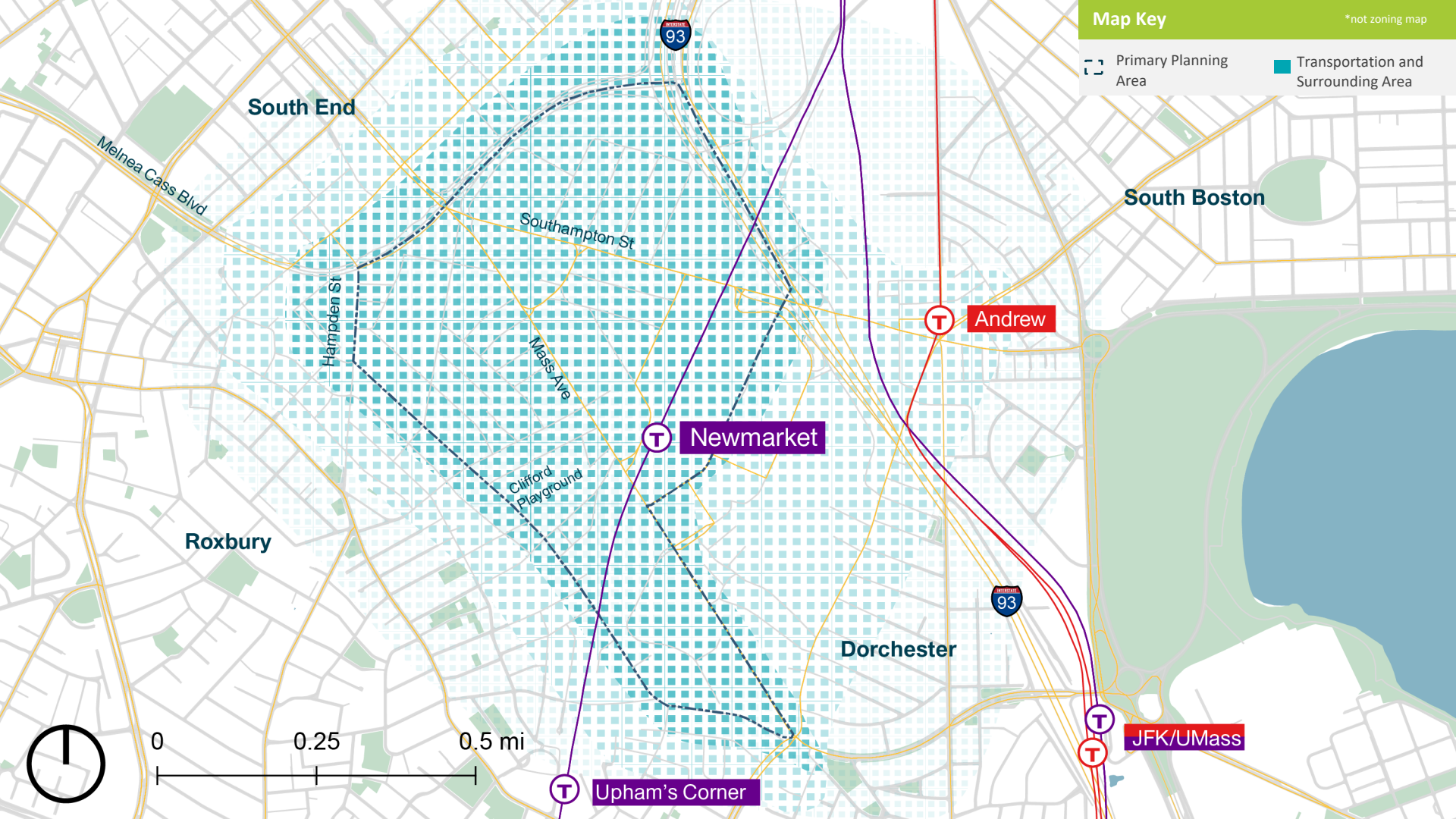


# Overview: Study Area

Imagine Boston 2030 identified the Newmarket neighborhood as a **critical center of industry** both for the city and the region.

- Newmarket is **part of a larger group of industrial districts** in Boston, Chelsea, Everett that play a vital role in the regional economy.
- Newmarket central location in Boston and along major transportation routes provides easy access to the area for residents, customers, and employees throughout Boston and Eastern MA.





-  Primary Planning Area
-  Transportation and Surrounding Area

South End

South Boston

Roxbury

Dorchester

Newmarket

Andrew

JFK/UMass

Upham's Corner

0 0.25 0.5 mi

# 03

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## Social Justice and Equity Framework

# Social Justice and Equity: Developing the Framework

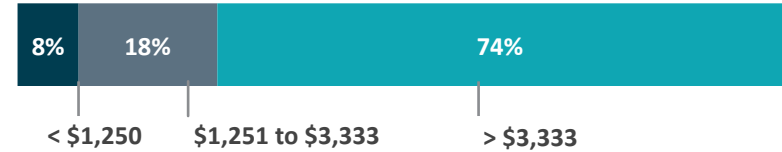
The BPDA has hired a consulting firm to help **develop an Equity Framework**. The framework will ensure the needs and future aspirations of communities of color and those residents with low-income in Boston be considered first. The equity framework is **applied to each planning topic**.

The framework will produce :

- Modify community outreach plan to include residents of the Fairmount Line
- Evaluate data collection and analysis
- Evaluate the risk high-value uses pose to business displacement and diversity of employment opportunities

## Workers by Monthly Earnings

### Newmarket



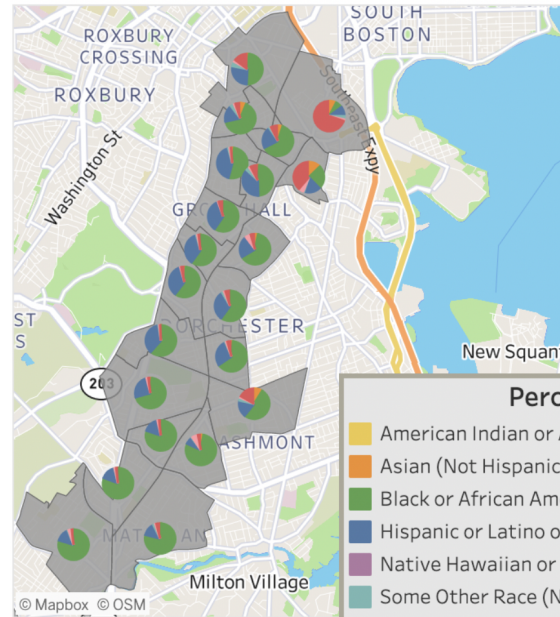
### Boston



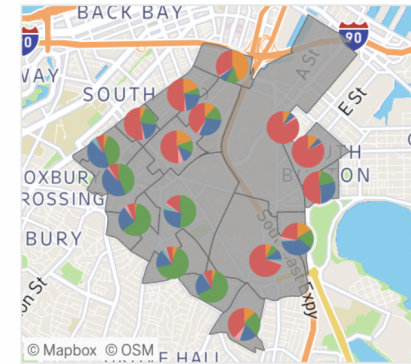
# Centering Impact on Community

- Architects and planners of PLAN: Newmarket must *place the needs and aspirations of residents of color and residents with low incomes first*
- Changes in Newmarket will be most *felt along the Fairmount Line*
  - Most residents who live within 15 minutes of Fairmount Line stops are Black, Hispanic, or Latino
  - Inclusive process must look beyond immediately abutting neighborhoods

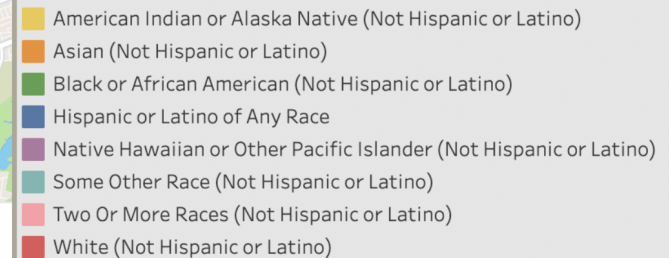
Tracts Within a 15-minute Walk of  
Fairmount Line Stations  
(ACS 2015-2019 5-Year Estimates)



Tracts Within a 15-minute  
Walk of Newmarket (ACS  
2015-2019 5-Year Estimates)



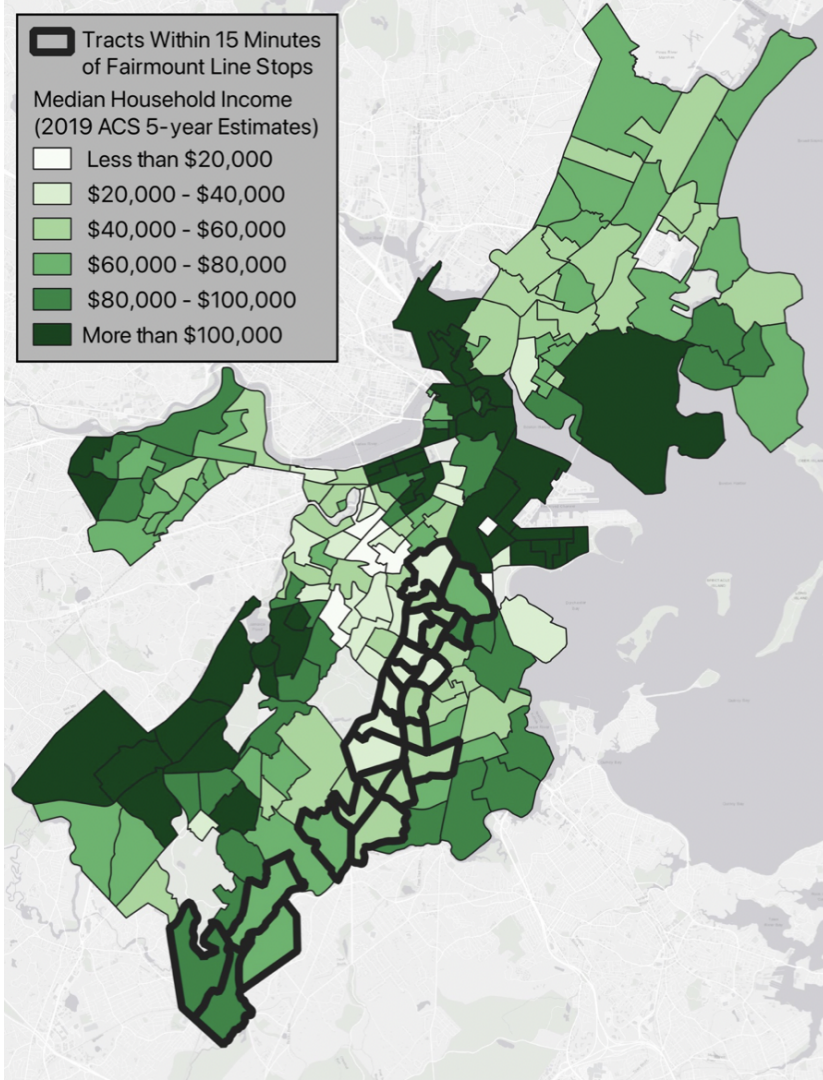
## Percent population by race





# Economic Justice and the Fairmount Line

- Median incomes in tracts along the Fairmount Line are **lower** than in Boston or across Suffolk County
  - Most tracts served by the Fairmount Line have median household incomes well below the citywide median of \$71,000
- Boston's **prosperity isn't shared equally** between its neighborhoods



# Social Justice and Equity Lens and Goals

- 4 key components to Equity Lens:
  - Historical and Neighborhood Context
  - Centering Equity in Planning and Development
  - Inclusive and Equitable Data
  - Design Thinking and Human-Centered Community Engagement
- 4 key equity goals within the project scope:
  - Economic
  - Public Realm and Urban Design
  - Mobility
  - Climate Resilience

# 04

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## Newmarket Today



# Newmarket Today

Newmarket is uniquely positioned for Distribution and food-related sectors:

- **Unique central location:** Newmarket's central location within Boston and access to major transportation routes provide access to customers throughout Boston and Eastern MA.
- **Industrial character:** Businesses have located here due to industrial building stock – affordable until recently – and industrial zoning.
- **Workforce access:** Newmarket offers proximity and transit connections to a workforce in Roxbury and Dorchester.
- **Food history:** Newmarket's decades-long history as a food production and distribution hub is a defining feature, with a concentration of both.



## Map Key

Primary Planning Area

Transportation and Surrounding Area

# Define 21<sup>st</sup> Century Use: Urban Industry

## Proximities



## Costs & Inefficiencies





# Newmarket Today: Transportation



Bike and Scooter needs



Hampden St toward Nubian Square



MBTA Newmarket



MBTA Bus 8 Route

# Newmarket Today: Social Services

Newmarket has become a hub for critical addiction and recovery services that serve some of Boston's most vulnerable residents.

- **Location separate from other uses:** Addiction and recovery have few places to locate given zoning regulations and residents' opposition to having these facilities located in their neighborhoods.
- **Co-locating to better provide support:** Locating service providers close to shelters and sober homes improves access to these services.



*Images: MATSDirectory.com, The Boston Globe*

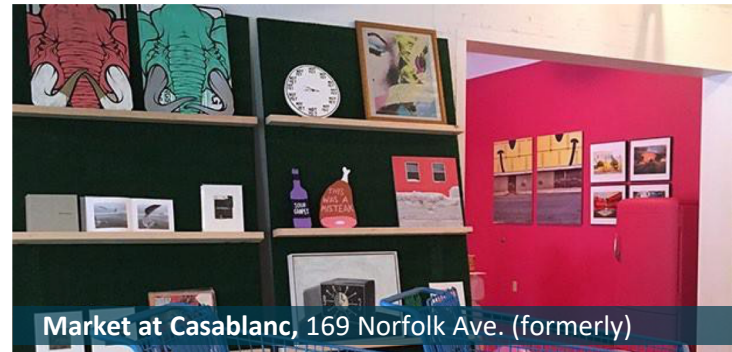
# Newmarket Today: Arts and Creative Makers

Newmarket began to attract painters, sculptors, and cabinetmakers in the 1980's however, many arts uses have been lost over time.

- **Affordable industrial space:** When Fort Point rezoned, many creatives located there moved to Newmarket, which offered centrally located, flexible and affordable industrial space.
- **Market Pressure:** In recent years, arts uses have been squeezed out due to market pressures.
- The Record Co., a not-for-profit recording studio, has been able to stay by negotiating a below-market lease as an anchor tenant when its building was repositioned.



The Record Co., 960 Massachusetts Ave.



Market at Casablanc, 169 Norfolk Ave. (formerly)

Images: The Record Co., WBUR



# Newmarket Today: Food Distribution



Wholesale Food Terminal



Lun Fat Produce

# 05

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## Presentation Intermission



# **06**

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## **Defining 21st Industry Uses & Jobs**



# Define 21<sup>st</sup> Century Use: Future of Newmarket

## Core PLAN: Newmarket Considerations

- Maintain traditional industrial jobs
- Attract industries of tomorrow
- Promote job equity and access
- Support growth of arts, creative economy, and makerspace
- Prevent displacement of addiction and recovery service providers

## Additional Considerations

- Retain essential distribution services in Boston
- Support urban resilience by reinforcing local manufacturing and supply chains
- Increase job density and total jobs
- Generate positive fiscal impacts – given business tax generation and policy interventions needed

# Define 21<sup>st</sup> Century Use: Goals

The goal of defining “21<sup>st</sup> Century Industry” is to identify the remaining **viable “legacy” industrial uses** and **emerging industrial uses** that are projected to grow

- Identify the **major sectors of 21<sup>st</sup> century industry** and how they have changed over time – nationally, regionally, in Boston, and in Newmarket.
- Understand **Newmarket business patterns** (industrial, office, arts, etc.), Newmarket’s **value proposition** to businesses, and **threats** to retaining businesses.
- Establish goals for a **future mix of sectors** in Newmarket as a center of 21<sup>st</sup> century industry - based on market trends, competitive advantages, and policy priorities.



# Define 21<sup>st</sup> Century Use: Process

## Develop a **taxonomy of urban industry**



Synthesize **precedent definitions** from peer cities



Research **national trends** in industrial subsectors

## Analyze local and regional **employment and real estate data**



Identify **strong and growing subsectors** within urban industry in the Boston region



Understand trends in **industrial real estate** in Newmarket and Boston

## Conduct **interviews** with local businesses and stakeholders



Find key **strengths and challenges** that businesses identify with Newmarket



Understand other **opportunities and threats** for industrial business viability

## Develop **trajectories** for Newmarket's future



Create **trajectories** based on local, regional, and national trends and findings



Identify **tradeoffs and needed actions** associated with each trajectory

The combination of trajectories chosen will **define 21<sup>st</sup> Century Industry** for Newmarket.

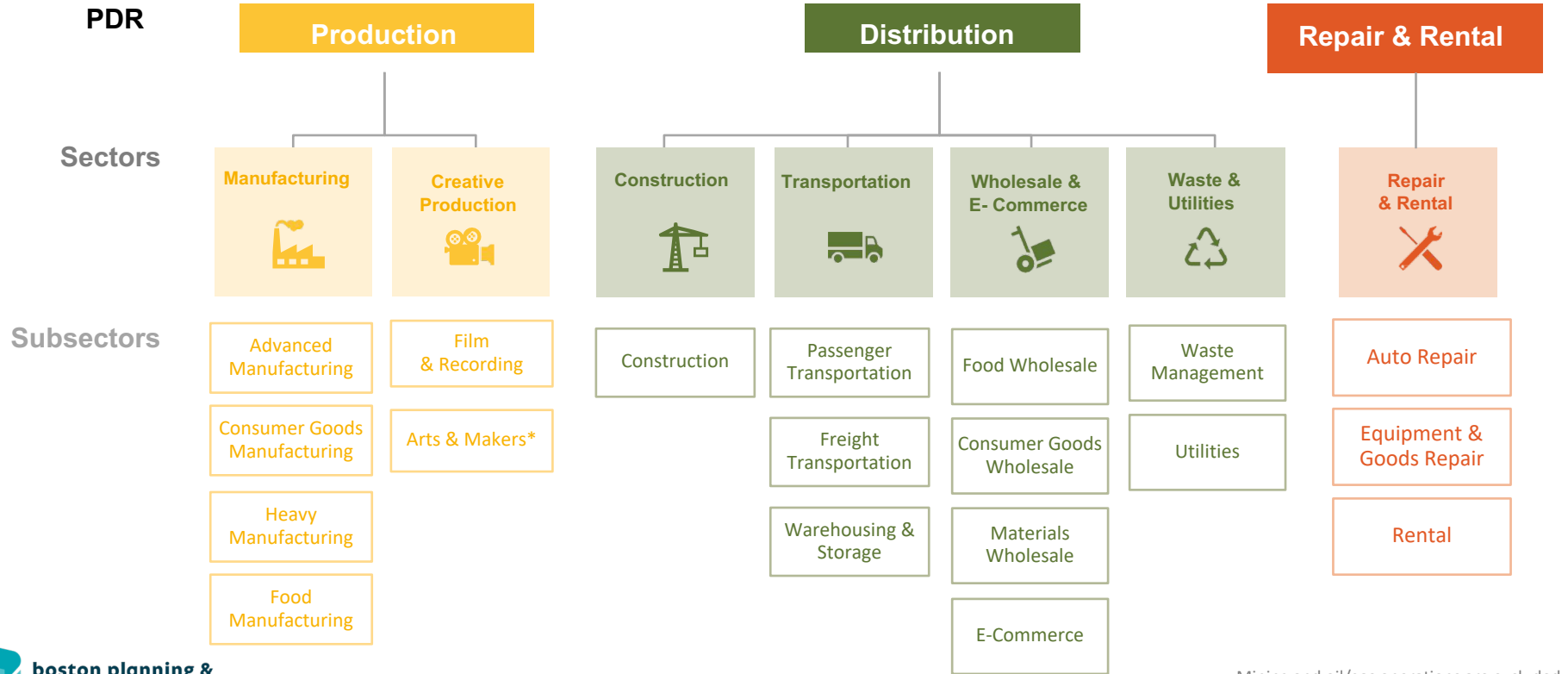




# Define 21<sup>st</sup> Century Use: Interviews

Organization	Sector
Abbott Investments	Real Estate
Action for Equity	Community Advocates
Boston Cab Dispatch	Transportation
CityFresh Foods	Food Manufacturing/Distribution
Cloud Kitchen	Food Manufacturing/Distribution
Eversource	Utilities
The Greater Boston Food Bank	Food Distribution
Industry Lab	Makerspace (Somerville)
Metro Credit Union	Banking
National Development	Real Estate
New England Culinary Arts Training	Culinary Job Training and Placement
Newmarket Business Association	Business Association
The Record Co.	Arts Non-Profit
Reenergy	Renewable Energy
Waldwin Group	Food Manufacturing/Distribution

# Define 21<sup>st</sup> Century Use: Taxonomy of Sectors





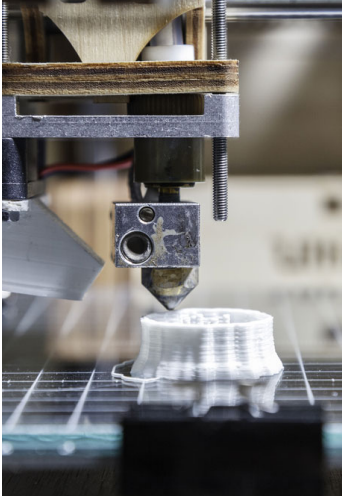


Mining and oil/gas operations are excluded.

\*Arts & Makers jobs are not included in subsequent data and figures due to classification issues, but are included here conceptually























# Define 21<sup>st</sup> Century Use: Potential Trajectories



Market preferred use	Essential services	Food heritage	Creative hub	Advanced manufacturing
Labs, e-commerce	Distribution, transportation, construction	Food manufacturing + distribution, urban ag, retail	Creative manufacturing, flex/maker space, arts, retail	Production/prototyping tied to R&D
				

**Goal across trajectories:** Prevent displacement of addiction and recovery services providers.


























# Define 21<sup>st</sup> Century Use: :Policy Considerations

Trajectory	Retain Essential Distribution Services	Support Urban Resilience	Increase Job Density and Total Jobs	Generate Positive Fiscal Impacts
<b>Market preferred use</b> Labs and/or e-commerce				
<b>Essential services</b> Distribution, transportation, construction				
<b>Food heritage</b> Food manufacturing + distribution, urban ag, retail				
<b>Creative hub</b> Creative manufacturing, flex/maker space, arts, retail				
<b>Advanced manufacturing</b> Production and prototyping tied to R&D in the urban core				

**Key**

-  Trajectory doesn't support goal
-  Trajectory supports goal

# Define 21<sup>st</sup> Century Use: Policy Tradeoffs

Trajectory	Retain Traditional Industrial Jobs	Attract Industries of Tomorrow	Promote Job Equity	Support Arts, Creatives, Makers	Prevent Addiction/ Recovery Displacement
<b>Market preferred use</b> Labs and/or e-commerce					
<b>Essential services</b> Distribution, transportation, construction					
<b>Food heritage</b> Food manufacturing + distribution, urban ag, retail					
<b>Creative hub</b> Creative manufacturing, flex/maker space, arts, retail					
<b>Advanced manufacturing</b> Production and prototyping tied to R&D in the urban core					



# **07**

## **Breakout Room**



# Breakout Room: Discussion Questions

1. What are the types of land uses in Newmarket that are currently an asset to you and your community? What additional types of uses would you like to see in Newmarket?
2. What kinds of jobs are you hoping to see more of in Newmarket? More traditional industries (food processing, social services, retail)? More 21st century business and labs? Other?
3. What issues, needs, and challenges do you and your community want to see addressed in PLAN: Newmarket?

# 08

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## Report Back and Next Steps



# Next Steps

- **For more information visit:** <http://www.bostonplans.org/planning/planning-initiatives/plan-newmarket-the-21st-century-economy-initiative>
- If we were unable to get to your question at this meeting or you have other questions email **Arreen.I.Andrew@boston.gov**
- Future Engagement and Outreach
  - Advisory Group Meeting – June 30<sup>th</sup> at 9:00 am
  - Summer Engagement Lab
  - Public Meeting Topics: Public Realm, Urban Design, and Mobility

# 09

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## Appendix





# DEFINING 21ST CENTURY INDUSTRY: PURPOSE

The goal of defining “21<sup>st</sup> Century Industry” is to identify the remaining **viable “legacy” industrial uses** and **emerging industrial uses** that are projected to grow in urban areas and Newmarket that achieve policy goals.

21<sup>st</sup> Century  
Industry

=

Viable Legacy Uses



+

Emerging Uses

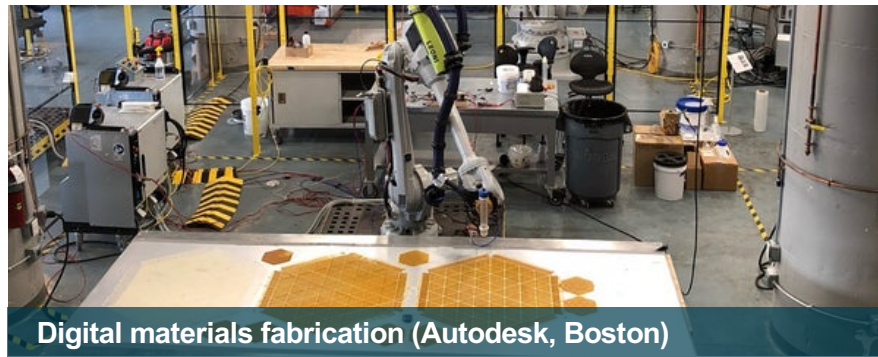


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# WHY DEFINE 21st CENTURY INDUSTRY?

Existing industrial classifications are outdated and do not reflect the extensive structural shifts in the economy over the past several decades – especially in the urban economy.

- The **North American Industry Classification System** (NAICS) was established in 1997 as the successor to the Standard Industrial Classification (SIC) system that had been in place since 1937.
- However, NAICS does not reflect the **nuances of 21<sup>st</sup> century urban industrial activities**.
- **Technology, urban development, and globalization** have dramatically reshaped urban industry, and the line between industry and other sectors is increasingly blurred.



Digital materials fabrication (Autodesk, Boston)



Manufacturing & retail hybrids (Trillium Brewing, Boston)

*Images: Foursquare, Boston Seaport*



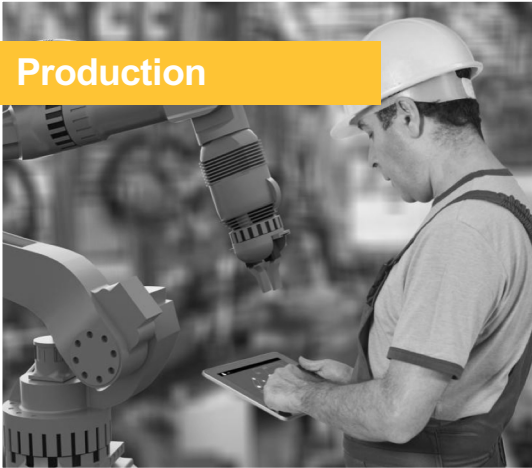
**boston planning &  
development agency**

# DEFINING INDUSTRY

Industrial businesses can generally be defined by their **preference for space in industrial zones**, typically with **lower rents, larger floorplates, and separation from residential uses**.

Industrial sectors can be broken down into **three high-level categories**:

**Production**



**Distribution**



**Repair & Rental**





# DEFINING 21ST CENTURY INDUSTRY: GOAL

The goal of defining “21<sup>st</sup> Century Industry” is to identify the remaining **viable “legacy” industrial uses** and **emerging industrial uses** that are projected to grow in in urban areas and in Newmarket specifically.

21<sup>st</sup> Century  
Industry

=

Viable Legacy Uses



+

Emerging Uses



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Images: Fortune, Forbes

# URBAN INDUSTRY: EMERGING USES

In cities across the country, a number of emerging uses has begun to appear in industrial districts that benefit from urban industry's key locational drivers, including:

## Niche/creative manufacturing

Manufacturing businesses continue to leave cities, but some remain that are driven by **creativity and consumer demand for niche products**. These tend to be in **specialized, high-end, low-impact, and/or small-scale sectors** like food and consumer goods, and often include **accessory retail**.

## Tech/R&D-driven production

Some urban manufacturing is driven by **technology and proximity to R&D in urban areas**. This includes industries like **advanced manufacturing and prototyping** which support the start-up phase of production and **urban agriculture** that benefits from proximity to consumers and life sciences R&D.

## E-commerce

COVID-19 has **accelerated the growth of e-commerce** and its impact on urban industry. The sector is reshaping the industrial market, with **last-mile distribution centers** driving rents and land costs higher. These distribution hubs seek proximity to urban populations and transportation infrastructure.



Urban apparel production,  
Raleigh Denim, Raleigh



Textile manufacturing robot,  
ARM Institute, Pittsburgh



E-commerce distribution hub, Amazon

# URBAN INDUSTRY: NATIONAL TRENDS IN RESILIENCY PLANNING

COVID-19 has shown the importance of urban manufacturing to resiliency.

## Resilient supply chains

COVID-19 has highlighted the importance of being able to **manufacture critical supplies in cities** (ranging from PPE to ventilators) during major supply chain disruptions – whether due to a pandemic, climate change, or other emergencies.

Thanks to the access to talent and proximity to research operations, urban manufacturing is particularly suited to **rapidly developing new technologies** in a crisis.

However, suburban manufacturing can **execute at scale** in an emergency. Linkages between urban and suburban manufacturing can make cities and regions more resilient.



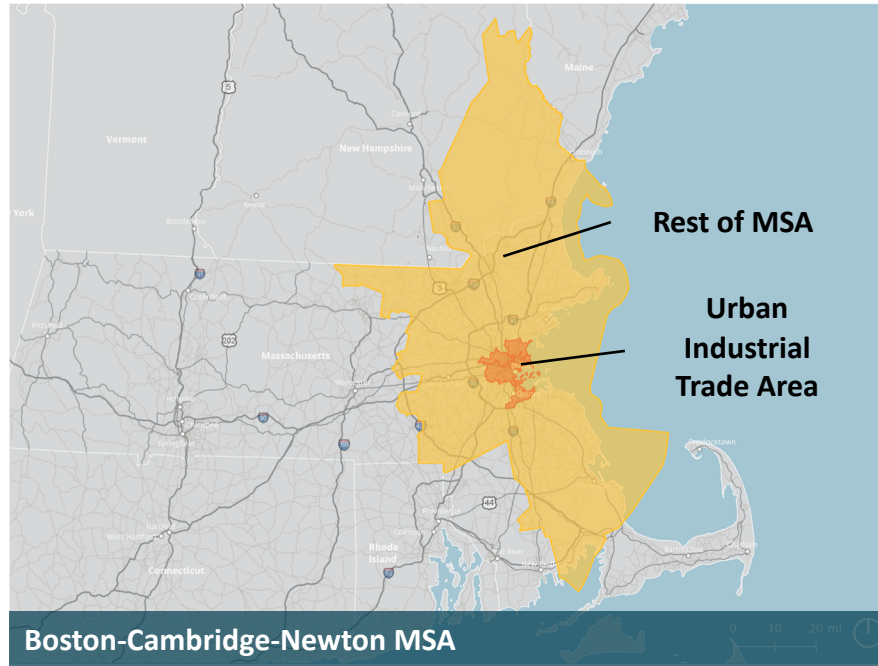
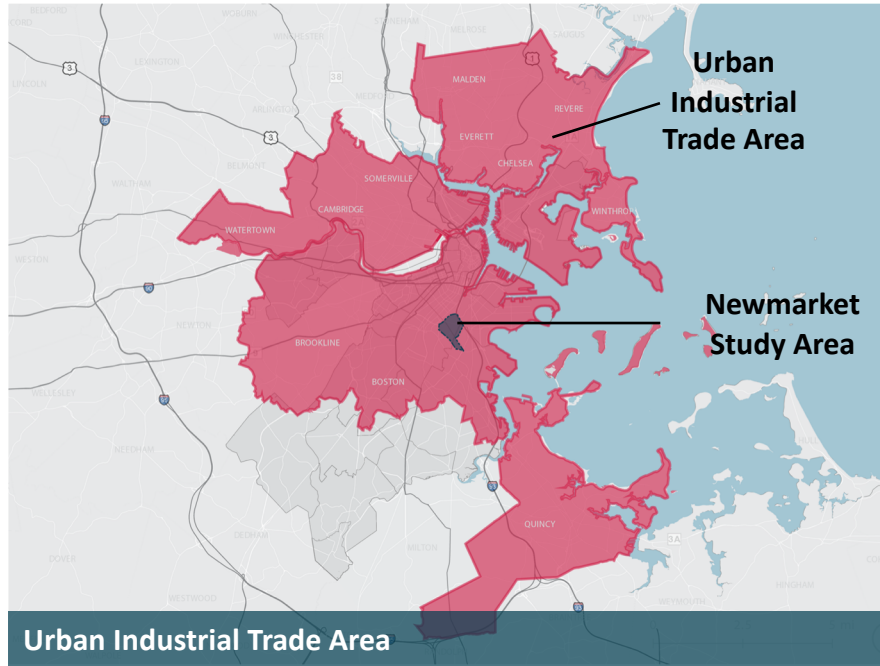
**Emergency ventilator production, 10XBeta/New Lab/Boyce, New York**

*In the early months of COVID-19, the product design company 10XBeta partnered with New Lab, a technology center in the Brooklyn Navy Yard, to rapidly design affordable ventilators and produce them at a Boyce Technologies fabrication facility in Queens. The design was based on one created by an M.I.T. class in 2010, refined in early 2020 through extensive collaboration between M.I.T. faculty, students, and alumni and the other project partners.*

*Image: The New York Times*

## DEFINING BOSTON'S URBAN INDUSTRIAL TRADE AREA AND THE REGION

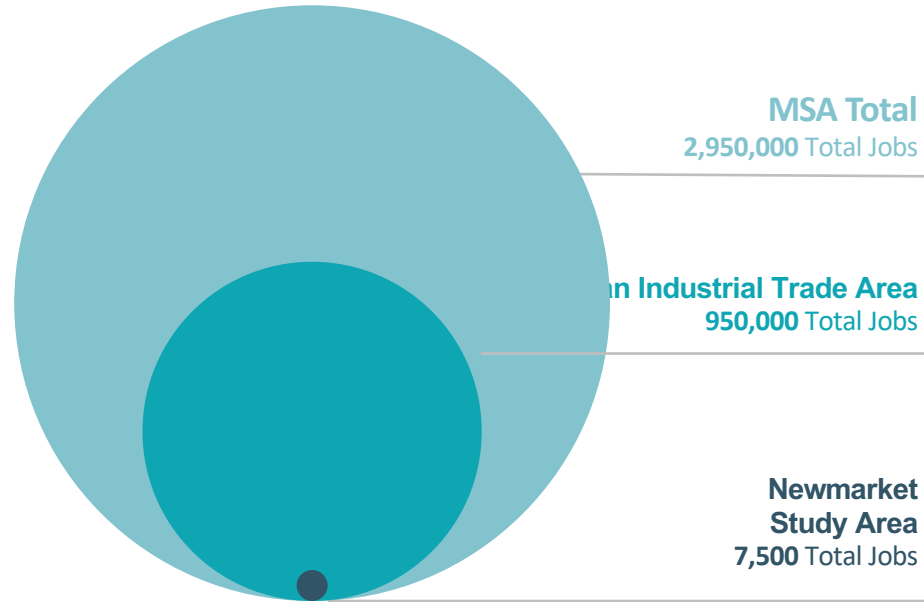
To better understand urban industry in the Boston area, we developed a custom boundary for Boston's **urban industrial trade area** – areas where urban industry is likely to seek to locate – to compare to **Newmarket** and the **non-urban MSA**.



*MSA is Metropolitan Statistical Area, as defined by the U.S. Office of Management and Budget*

## TOTAL JOBS IN NEWMARKET, URBAN INDUSTRIAL TRADE AREA, AND REGION

The Boston MSA is the 11th-largest in the country by employment, with almost 3 million total jobs. Around 1/3 of these jobs are within the **urban industrial trade area**, and about 1 in every 125 jobs in the trade area is in **Newmarket**.

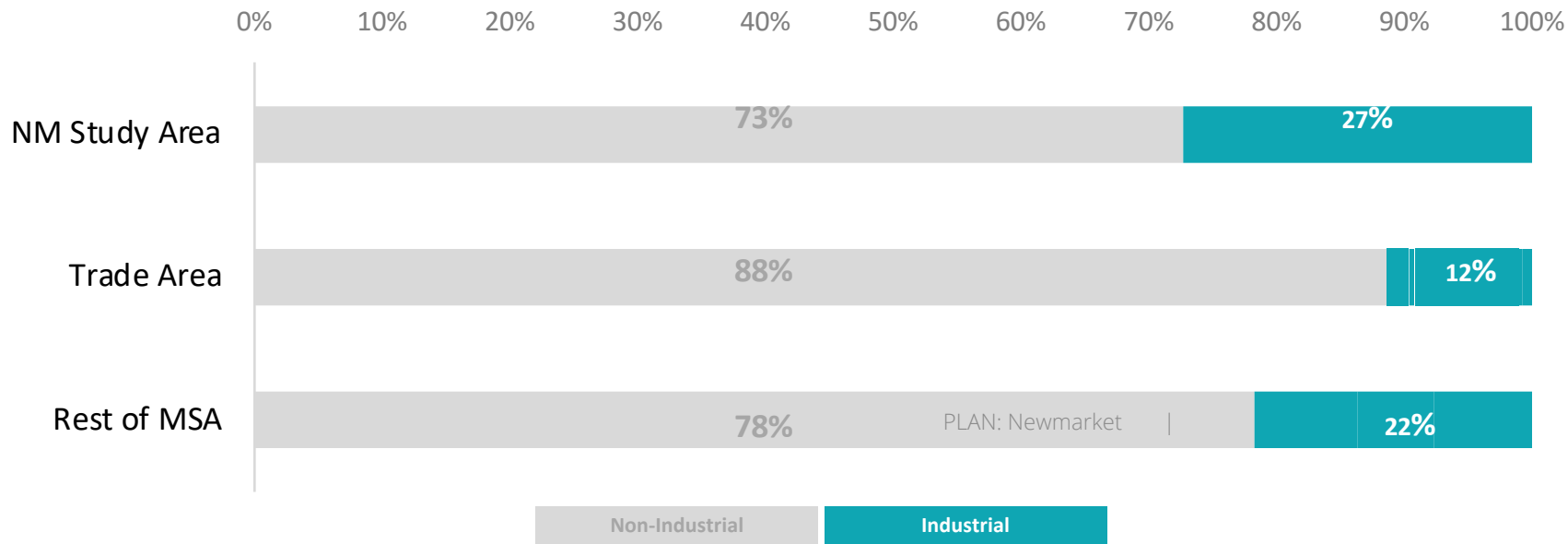




## SECTOR DISTRIBUTION IN NEWMARKET, THE TRADE AREA, AND THE REGION

Newmarket's share of industrial jobs is higher than that of the other geographies.

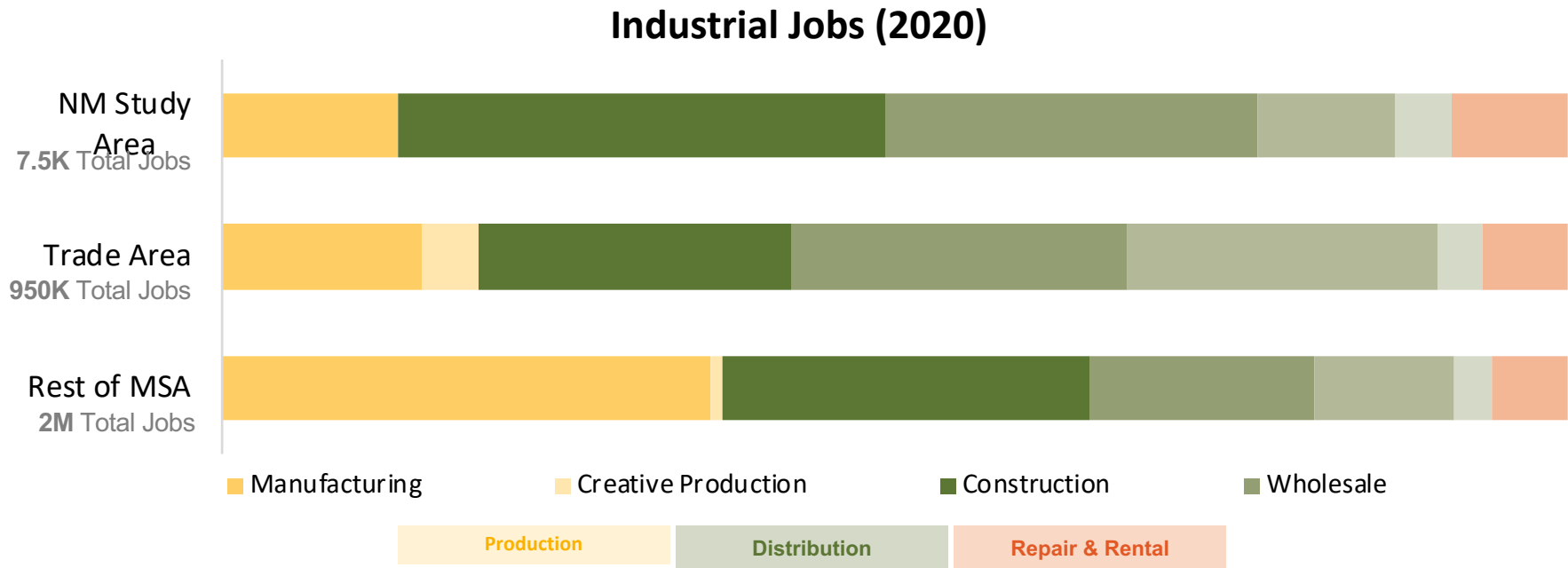
### Industrial and Non-Industrial Jobs (2020)



Source: InfoUSA, EMSI. Notes: Wholesale category includes e-commerce; 500 of the 735 construction jobs in Newmarket are Suffolk Construction employees, most of which are likely to be office workers at the company's headquarters.

# INDUSTRY IN NEWMARKET, THE TRADE AREA, AND THE REGION

**Distribution**, which seeks to be near urban population centers, constitutes a higher share of industrial jobs in the trade area and Newmarket than in the rest of the MSA, which has a greater share of **Production** jobs.

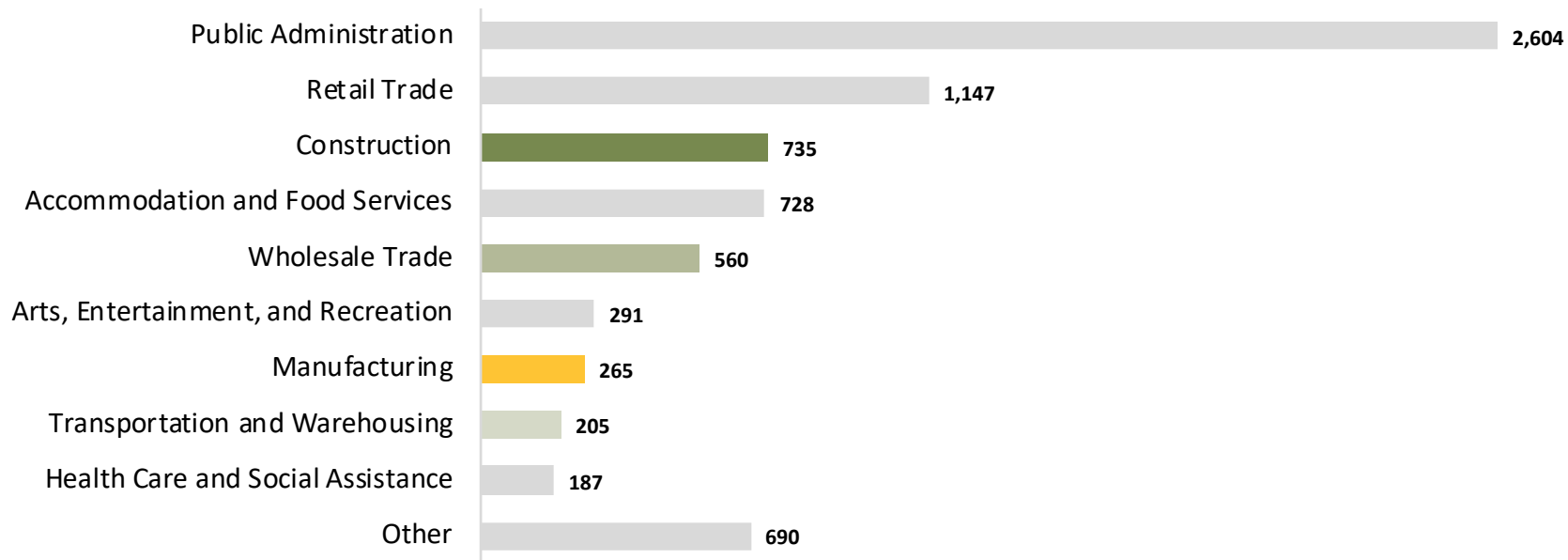


Source: InfoUSA, EMSI. Notes: Wholesale category includes e-commerce; 500 of the 735 construction jobs in Newmarket are Suffolk Construction employees, most of which are likely to be office workers at the company's headquarters.

# EMPLOYMENT IN NEWMARKET

Public administration is the largest jobs sector in Newmarket today. The largest industrial sectors are construction, wholesale trade, and manufacturing.

## Newmarket Jobs by Sector (2020)



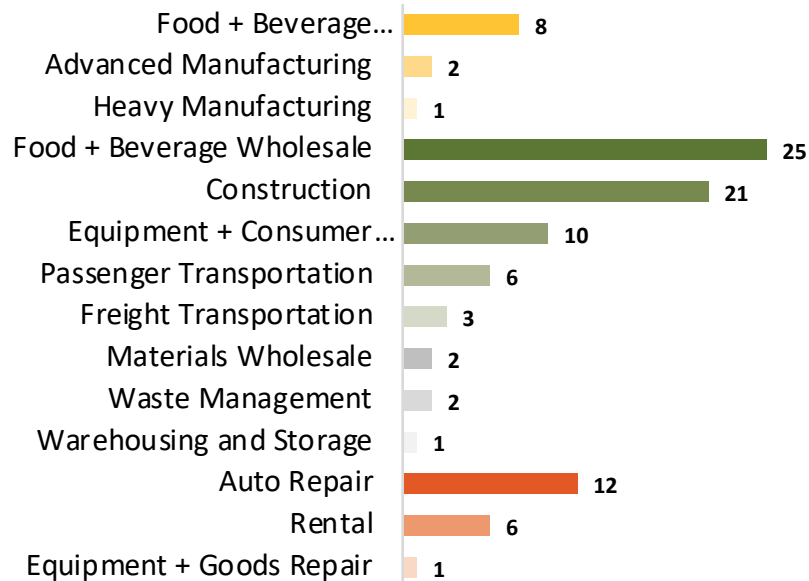
Source: InfoUSA. Note: 500 of the 735 construction jobs in Newmarket are Suffolk Construction employees, most of which are likely to be office workers at the company's headquarters.



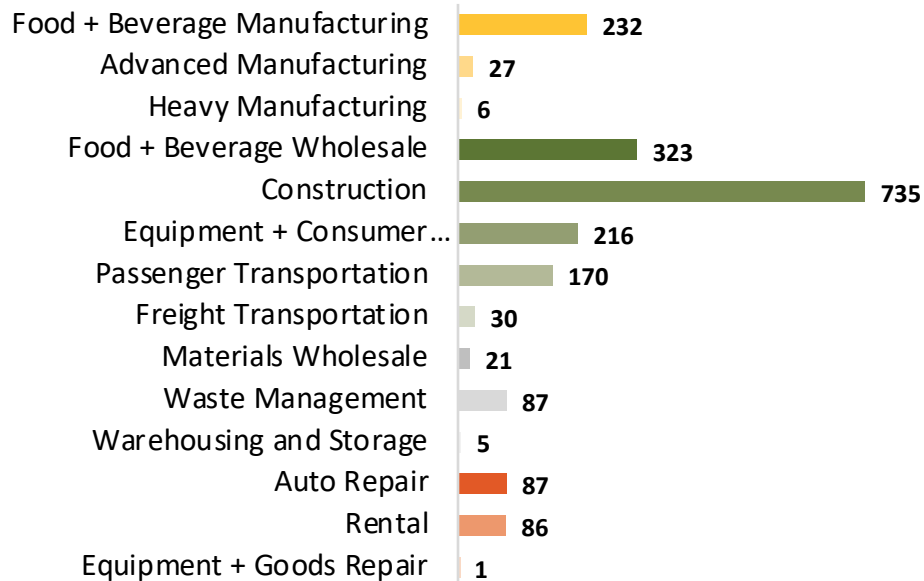
# INDUSTRY IN NEWMARKET

Reflecting its strategic advantages and history, industry in Newmarket is dominated by Distribution, particularly food distribution, though it also has significant food manufacturing.

## Newmarket Industrial Businesses (2020)



## Newmarket Industrial Jobs (2020)



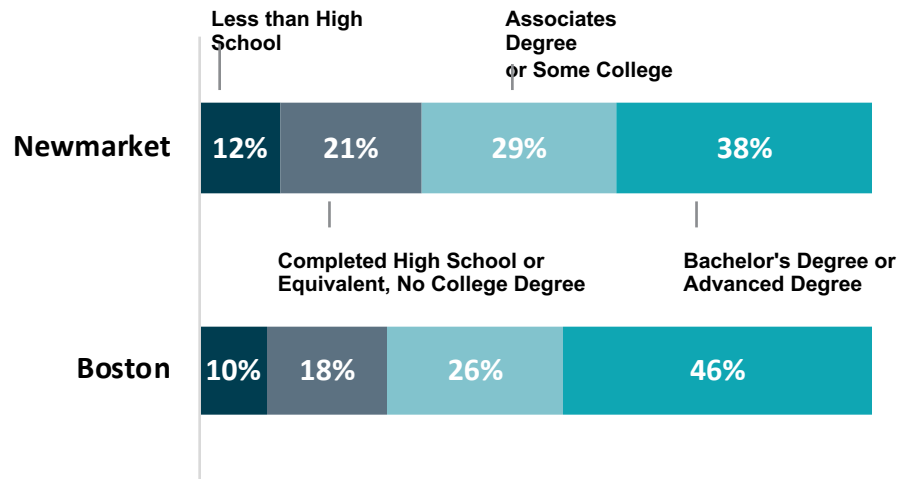
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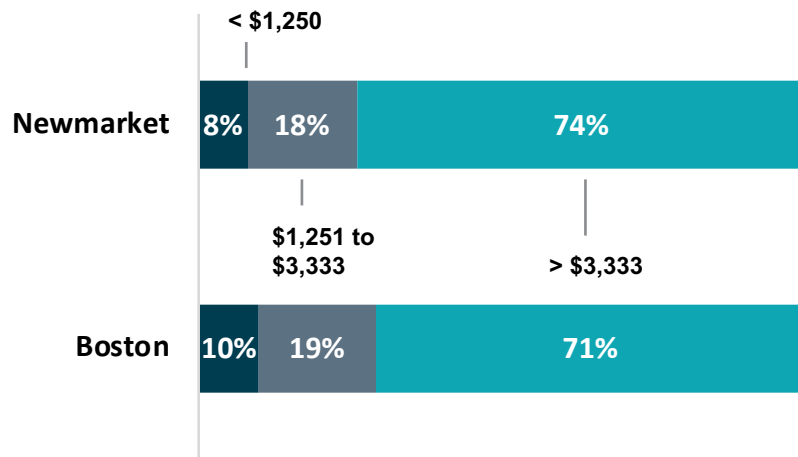
# WORKERS IN NEWMARKET

While fewer workers in Newmarket have 4-year degrees than in Boston as a whole, Newmarket jobs pay slightly more.

## Workers by Educational Attainment



## Workers by Monthly Earnings

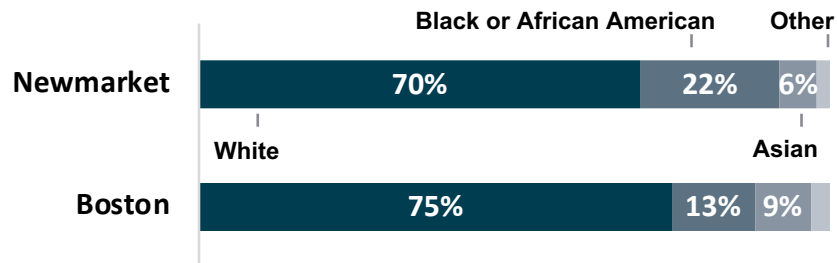


Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarte Employment, 2nd Quarter of 2011-2017) and BPDA Research Division Analysis.

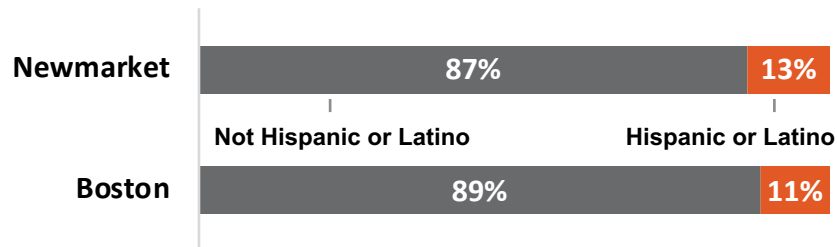
# WORKERS IN NEWMARKET

The workforce that works in Newmarket is more racially and ethnically diverse than in Boston as a whole, and the majority live within 10 miles.

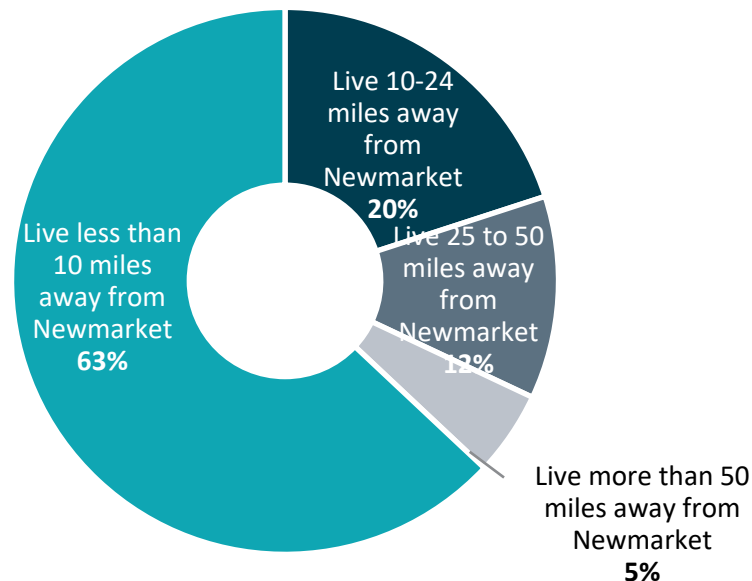
## Race of Workers



## Ethnicity of Workers



## Proximity of Newmarket Workers' Residences



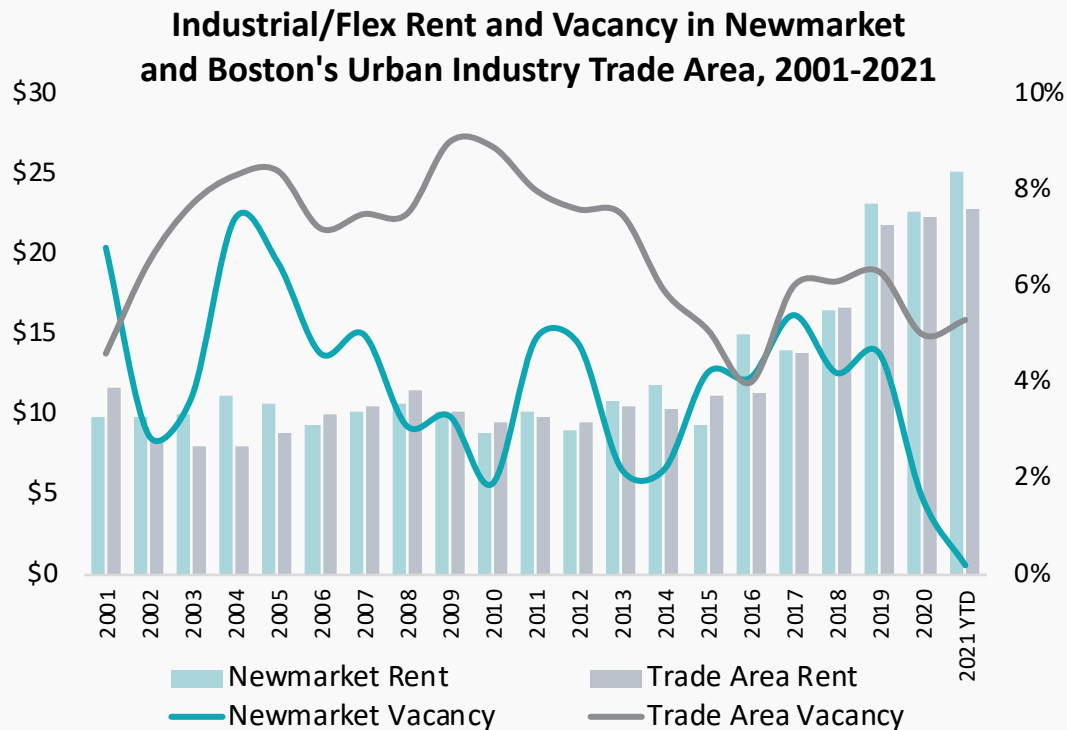
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# WHAT WE HEARD: NEWMARKET CHALLENGES

Increasingly costly, constrained space in Newmarket threatens to displace industry, arts, and social services.

- **Space and rents.** Rising rents, competition for space, speculation, and a small land area have combined to place intense financial pressure on Newmarket businesses – especially those who rent rather than own their space.

Since 2019, **industrial vacancy** has plummeted to **below 1%** in Newmarket, while **industrial rents** have **more than doubled** in both Newmarket and the trade area since 2015.



Source: CoStar

# 21st CENTURY INDUSTRY: EMERGING USES

Some urban manufacturing is driven by creativity and consumer demand for niche products.

## Niche food + consumer goods manufacturing

Overall, manufacturing businesses continue to leave cities. Those that are growing in cities are increasingly **specialized, high-end, low-impact, and/or small-scale** and benefit from proximity to consumers willing to pay a premium.

These tend to be in **food** and **consumer goods** manufacturing sectors, the latter producing goods such as apparel or furniture. Sometimes, they include **accessory retail**.



Urban apparel production, Raleigh Denim, Raleigh

## Artists + makers

There is increasingly overlap between **artists** and **makers**. The latter are individuals or very small companies producing small-batch products, sometimes in makerspaces with shared equipment.

Both artists and makers produce physical products, sometimes creating fumes and noise. They sometimes occupy the same or similar buildings.



Urban arts production, Emily Eisenhart, Austin

*Images: Raleigh Denim Workshop/Jenny Love, Emily Eisenhart*





# 21st CENTURY INDUSTRY: EMERGING USES

Some urban manufacturing is driven by technology and proximity to R&D.

## Advanced manufacturing + prototyping

**Advanced manufacturing** focuses on high-tech products where value-add is driven by **precision and process** rather than scale. The growth of R&D and life sciences in urban innovation districts is creating demand for **prototyping and production facilities**, which can improve efficiency in the startup phase and bring products to market faster.

Larger-scale advanced manufacturing typically makes more economic sense in the **suburbs** or **abroad**.



Textile manufacturing robot, ARM Institute, Pittsburgh

## Urban agriculture

While still in its early stages as an industry, urban agriculture has recently shown promise in creating **high-efficiency yields** for certain crops while **reducing VMT** associated with food transportation.

Urban ag can include rooftop farms as well as tech-driven, higher-yield indoor vertical farms.



Indoor agriculture, Aerofarm, Newark

*Images: Apparel Resources, Boston Globe*



# 21st CENTURY INDUSTRY: EMERGING USES

COVID-19 has accelerated the growth of e-commerce and its impact on urban industry.

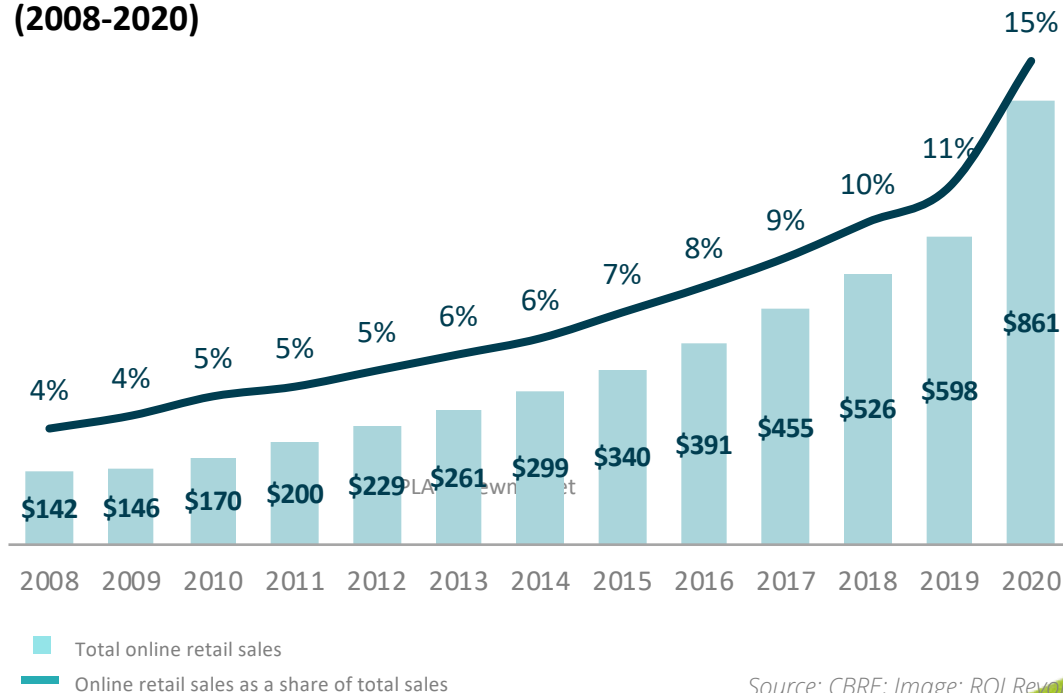
## E-commerce

E-commerce is reshaping the industrial market, with **last-mile distribution centers** driving rents and land costs higher. Last-mile distribution seeks **proximity to urban populations and transportation infrastructure** and can often pay more for space than other industrial sectors. Many facilities operate around the clock, creating **more disruption** than other distribution.



E-commerce distribution hub, Amazon

## U.S. online retail sales in billions (2008-2020)



Source: CBRE; Image: ROI Revolution

